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ABSTRACT

Fifteen first-time fathers who observed as their wives vaginally delivered stable infants (Apgars 8 or above at 5 minutes) in a metropolitan hospital in the Southeastern United States consented to participate in a descriptive-comparative study. Fathers holding their infants were observed by the researcher for a 30 minute uninterrupted period on the infants' second day of life. Bonding behaviors and Infant State were recorded on a Bonding Observation Instrument. Total scores were tabulated and predominant infant state assigned. After the observation period all fathers completed a Demographic Data Questionnaire. Multiple Regression analysis was used to compare bonding scores with the following independent variables: infant state, father's description of birth experience, age, education, income and occupation of fathers, sex of infant, previous experience caring for infant, comfort caring for own infant, prenatal classes, and length and strength of marriage. While none of the individual independent variables were found statistically significant (R Squared over .5), all the independent variables compared together with the bonding scores accounted for over 97% of the variance of this sample.



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EFFECTS OF PRESENCE AT DELIVERY
UPON PATERNAL-INFANT BONDING

BY
SANDRA D. WIGGIN

Submitted in partial fulfillment of the requirements
for the Master of Nursing Degree
in the Nell Hodgson Woodruff
School of Nursing
Emory University
May, 1988

DEDICATION

This study is dedicated to my husband, Gary C. Wiggin, and our son, Christopher. Without Gary's perseverance and excellence in teaching word processing techniques and his effectiveness in salvaging seemingly hopeless endeavors this thesis would not have been possible. Christopher's adaptability and good humor during data collection episodes were instrumental in my continued enthusiasm. Thank you family!

The proposal for this study was approved by the
Institutional Review Board, Nell Hodgson Woodruff School
of Nursing, of Emory University, on August 21, 1987.

Accepted by the faculty of the Nell Hodgson Woodruff School
of Nursing, Emory University, in partial fulfillment of the
requirements for the Master of Nursing Degree.

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Director of Thesis

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Neva Alford also deserves my gratitude for her cheerful, unfailing provision of potential subjects over an extended period of time despite demanding professional obligations. With her as an example how can I help but provide my own support to those conducting investigations within my area of responsibility? Thank you, Neva.

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EFFECTS OF PRESENCE AT DELIVERY UPON PATERNAL-INFANT BONDING

ABSTRACT

Fifteen first-time fathers who observed as their wives vaginally delivered stable infants (Apgars 8 or above at 5 minutes) in a metropolitan hospital in the Southeastern United States consented to participate in a descriptive-comparative study. Fathers holding their infants were observed by the researcher for a 30 minute uninterrupted period on the infants' second day of life. Bonding behaviors and Infant State were recorded on a Bonding Observation Instrument. Total scores were tabulated and predominant infant state assigned. After the observation period all fathers completed a Demographic Data Questionnaire. Multiple Regression analysis was used to compare bonding scores with the following independent variables: infant state, father's description of birth experience, age, education, income and occupation of fathers, sex of infant, previous experience caring for infant, comfort caring for own infant, prenatal classes, and length and strength of marriage. While none of the individual independent variables were found statistically significant (R Squared over .5), all the independent variables compared together with the bonding scores accounted for over 97% of the variance of this sample.

CHAPTER I

INTRODUCTION

Background

The last decade has seen a revolution of sorts in the manner health care is rendered in the realm of parent-child nursing. Prior to the 1970's having a baby was something a woman did alone. Her only support was provided by the nursing staff working in the labor and delivery areas. Family members, including the father of the baby, were expected to remain in waiting rooms until the physician appeared to report the condition of the woman and the sex of the new baby. The classic portrayal of an expectant father was a chain-smoking man nervously pacing the hospital waiting room. Beginning in the mid to late 1960's despite objections from many professionals, husbands were allowed to support their wives through the labor and delivery process and witness the births of their children (Morton, 1966). The onset of the use of psychoprophylaxis in labor and the requirement of a "coach" increased the incidence of fathers present in the labor and delivery setting. The classes required for a psychoprophylaxis coach met the criteria outlined by many hospitals as a prerequisite for admission to the labor and delivery areas (Bean, 1972).

As fathers began to gain access to the previously

taboo labor and delivery areas, mother-infant bonding became a popular concept (Klaus & Kennell, 1976).

Engrossment was introduced from studies conducted with fathers and newborns in the first few days after birth as the male counterpart of mother-infant bonding (Greenberg & Morris, 1974).

Although studies documenting the importance of maternal-infant bonding are prolific, those documenting the importance of paternal-infant bonding are not as plentiful. The studies that specifically address the effects of the fathers' presence at delivery upon the attachment behaviors exhibited by the fathers reflect slightly more positive than negative (those without a significant difference) findings. It is postulated, however, that the studies which reflect more positive findings are not as sound methodologically as the studies which reflect negative findings. Specifically, these studies seemed to lack controls for variables that might have influenced the development of attachment (Palkovitz, 1985).

In the 1980's the norm in the middle and upper classes seems to be for all fathers to be present in the delivery room for the births of their infants. In fact, the literature reveals that many men feel pressured by health professionals to go into the delivery room regardless of their own personal preferences. It has

also been validated that men who inadvertently are excluded from witnessing the births of their infants feel compelled to "make up for it" by spending extra time with their infants in the presence of their wives for up to five months after birth (Palkovitz, 1985).

Although the norm may be for fathers to be present at the births of their infants, some health professionals remain reluctant to allow "lay persons" into the labor and delivery setting. The researcher has personally witnessed comments from professionals indicating their hesitance to allow bonding time for parents with their infants in the delivery room. The bonding time is thought by the health professionals to interfere with delivery of patient care. For example, it is difficult to obtain a blood pressure measurement on a woman holding her infant. It is also difficult to evaluate an infant's status when the infant is in a parent's arms wrapped in a blanket.

If the father's presence in the delivery room leads to a positive outcome, what would be the outcome if the father and infant had some time together to engage in bonding activities?

Theoretical Foundation

The sensitive period has been described as a unique interval in the first minutes to up to a month of life during which optimal parent-infant bonding begins.

Bonding is the rapid formation of an affectional tie, unidirectional from parent to infant, during the first hours and days after birth, enhanced by physical contact (Klaus & Kennell, 1976).

Bowlby (1969) reported from observations of rhesus monkeys, baboons, and great apes that males were very protective and attracted to females with young. Although Bowlby did not specifically study the male, the above observation first suggested the existence of paternal bonding or the formation of attachment between a father and his infant. He also stated that "the goal of attachment is to promote proximity to or contact with the person to whom one is attached." Ainsworth expanded this definition of attachment to "an affectional tie that one person forms to another specific person binding them together in space and enduring over time."

Bowlby also reported from his observations of human infants that the newborn has the ability to elicit behavior from adults. Infants tend to maximize the various types of stimuli that adults initiate. Infant behaviors such as crying and smiling have a signaling function to get the parent closer; while sucking, following with the eyes and clinging allow the infant to seek and maintain contact. When the infant turns his head toward a speaker, this encourages that speaker to continue talking to the infant. Newborns tend to prefer

to gaze at moving patterns resembling a human face and listening to a human voice (Brazelton, 1984).

Bowlby's discussion of fathers indicated that father-infant attachment depends upon three factors: the father's past attachment experiences in his own life, how the father perceives the infant (perhaps from the time of birth if present at the delivery), and the pleasure or pain value a father places on the experience. He indicated that if a father associates the birth with pleasant feelings then he will seek to maintain these good feelings and seek contact with the infant. To the contrary, if the father associates the birth with painful feelings then he may attempt to reduce or avoid the displeasure and not seek contact with the infant (Fortier, 1988).

Greenberg and Morris (1974) identified paternal behaviors associated with paternal-infant bonding and termed them engrossment. They defined engrossment as a sense of absorption, pre-occupation, and interest in the infant. The seven characteristics of engrossment listed by Greenberg and Morris included visual awareness of the newborn, tactile awareness of the newborn, awareness of distinct characteristics of the newborn, perception of the newborn as perfect, a strong feeling of attraction to the newborn resulting in a focusing of his attention on the infant, extreme elation or a "high," and an

increased sense of self-esteem.

Studies have not proven or disproven the existence of a sensitive period in humans (Palkovitz, 1985). As a result, Kennell and Klaus now refer to bonding as the long-term process of parents developing emotional ties to the child in which the events of the sensitive period are but one ingredient (Klaus & Kennell, 1982). While Kennell and Klaus continue to support the existence of a sensitive period, the definition has been expanded to include attachment parameters (long-term). The literature is consistent in referring to attachment as the development of a long term tie or bond between two people.

In this study the effect of the presence or absence of the fathers at the birth of their infants upon attachment-bonding behaviors of the fathers toward their infants was explored. The work of Klaus & Kennell and Greenberg & Morris served as the primary framework for this study.

Hypothesis

Based upon the theoretical framework and a review of the literature, the following hypotheses were derived:

H0: There will be no significant difference in the bonding scores of those first-time fathers present at birth and those not present at birth when measured two days after birth.

HA: There will be significant difference in the bonding scores of those first-time fathers present at birth and those not present at birth when measured two days after birth.

Definition of Terms

The following terms were operationalized and applied only to this study:

First-time father. A male whose newborn is his first living child. Neither he nor his wife will have had other live births, either adopted or from a previous marriage.

Intact Marriage. The parents of the infant will be legally married at the time of the observation period.

The remaining definitions are theoretical in nature and were derived from the literature:

Paternal-infant bonding. A process of the father developing emotional ties to the child in which the events of the sensitive period are but one ingredient. Paternal-infant bonding can be measured by observing paternal behaviors and infant behavior in response to those of the father.

Attachment. An attachment is a relationship between two people that is specific, unique, and endures through time. (Taubenheim, 1981).

The bond/attachment between parents and their children can last for up to seventy or eighty years with

the increasing life expectancies of today. In the next chapter a review of the literature on paternal-infant bonding/attachment will be discussed to provide the data on which this study was based.

CHAPTER II

LITERATURE REVIEW

A review of the literature on Paternal-infant bonding revealed several studies addressing numerous variables thought to influence the development of a relationship between a father and his infant. For the purposes of this study the review focused upon research assessing two main areas: paternal behavior and variables affecting paternal-infant bonding/attachment. The studies were presented in chronological order in each of the two categories.

Paternal behavior, attitudes and perceptions

Greenberg and Morris (1974), in an experimental study (N=30), compared fathers who attended the births of their infants with fathers who did not attend the births of their infants through the use of a questionnaire administered 48-72 hours after the births of their infants. Roughly half of the fathers from each group were also interviewed following completion of the questionnaires. Demographic data were similar for the two groups. Greenberg and Morris, in this study, outlined the characteristics of engrossment - the newborn's impact upon the father.

The data obtained from this study suggested that fathers who were present at the births of their infants felt more confident in their ability to identify their

child. However, the researchers stated no highly significant differences between observations of engrossment of those fathers who witnessed the births of their infants from those who did not witness the births of their infants. Greenberg and Morris mentioned no validity or reliability data for their instrument, applied no controls for prior attitudes of the fathers before the births, and documented differences in the amount of time spent with infants, classes and labor room time between the two groups.

Cronenwett and Newmark's (1974) descriptive study evaluated the responses to childbirth of one hundred fifty two (N=152) fathers. A self contained questionnaire containing a one page demographic data tool and a Likert type scale was given to each father after the birth of his infant. The fathers were divided into three groups based upon attendance at childbirth classes and whether or not the father attended the birth of his infant: prepared attenders, unprepared attenders, and non attenders.

The findings indicated no significant difference among the three groups in response to the infant items on the scale. The group consisting of prepared attenders seemed to have an enhanced relationship with their spouses. Preparation also seemed to be related to a positive perception of self. Those fathers who attended

the birth tended to view childbirth as more positive than did those who did not attend the births of their infants.

A scale administered prior to delivery to assess prebirth attitudes of these fathers would have assisted in controlling for this unaddressed variable. There was a big variance in the type of anesthesia used among the three groups. No reliability or validity statistics were given for the instrument.

Leonard (1976) conducted a descriptive study of fifty two (N=52) first-time fathers' attitudes toward their newborns. The researcher approached each father on the evening of the second postpartum day and administered a questionnaire which assessed demographic variables and fathers' attitudes toward their newborn. Reliability data was provided for attitude testing. Demographic and psychosocial variables were correlated with the attitude scores of fathers using the Pearson Product Moment correlation. The following factors were significant at the .05 level: number of children now desired, whether this pregnancy was planned, type of delivery (Cesarean birth generated higher attitude scores), whether they enjoyed being with young children, and knowledge of baby care. A larger sample size with more variables addressed would have been desirable.

McDonald (1978) conducted a descriptive study

with seven (N=7) fathers to identify paternal behaviors toward their newborns in the birth setting. Video cameras were used to record the first nine minutes of neonate-oriented paternal behavior. Inter-observer reliability was determined to be 98%. The trained observers identified paternal behaviors during the first three minutes of contact and compared them to successive three minute intervals of tape. Seven types of paternal behavior were identified. Multiple linear regression techniques were used to determine whether significant linear relationships existed between the identified behaviors and the three observation intervals. The seven paternal behaviors identified in this study were hovering, prolonged gazing, visual contact, pointing, face-to-face, fingertip contact, and palming contact.

The above paternal behaviors observed by McDonald were similar to the behaviors exhibited by mothers toward their newborns. All the above observations occurred in a home-like birth environment. A replication of this study to include observations in other types of birth settings would be helpful to reinforce these data.

Rodholm and Larsson (1979) in a descriptive study with fifteen fathers (N=15) used photographing fathers at first contact with their infants to observe the behaviors exhibited. The photographs were analyzed by trained observers for particular behavior categories. An

orderly progression of behavior was observed to include the following: touching extremities, touching with fingers and fingertips, palms, and then dorsal aspect of fingers. Slowly increasing eye contact to the en face position was noted. The only instrument - evaluation of photographs - had reliability data provided.

Bills (1980) studied the effect of planned physical contact on the enhancement of the formation of paternal-infant affectional bonds. In the two phase experimental study thirty (N=30) fathers completed three types of questionnaires and were divided into a control or experimental group based upon physical contact versus no physical contact with their infants. In phase 1 of the study the fathers completed an affectional relationship questionnaire (to measure the quality of an affectional bond with the infant) and a personality research form (a scale to determine whether nurturing traits were present) three weeks prior to their wives' estimated dates of confinement. After delivery, in Phase 2, the fathers were divided into the two groups described above, completed the task sequence questionnaire (assessed subjective reactions to bathing, feeding, diapering, and burping their infants), as well as completing again the two questionnaires described above in Phase 1. The researcher reported the major finding of this study to be the universal and enthusiastic

acceptance of early father-infant interaction.

The control group of Bill's study differed in that eight subjects elected to participate in rooming in. This mandated that the researcher use only the remaining seven subjects who did not choose rooming in to compare with seven subjects from the experimental group who chose rooming in for her data analysis. It was difficult to conceive that a researcher could forbid interaction between a father and his infant as implied by this study when subjects were assigned to the no physical contact group. No mention was made in the study of an effort to describe the type and quantity of physical contact the fathers of the experimental group had with their infants. No mention of reliability or validity data was mentioned for any of the data gathering instruments.

Taubenheim (1981) conducted a pilot descriptive study with ten (N=10) first-time fathers to document the process of paternal-infant bonding. She used three instruments in the data gathering process: two written questionnaires (one for demographic data and one for attitude) and an observational tool. The instruments have no reliability or validity data established.

Findings in this study suggest that engaging in caretaking behaviors affects paternal-infant bonding as fathers with the highest bonding scores had all fed their infants during the observation session.

Humenick and Bugen (1981) in an exploratory study, compared self-reported parent-infant interaction scores of sixty six (N=66) new parents to selected prenatal, birth, and postpartum experiences. Two instruments consisting of a Likert type scale format were used for this study. Prenatally couples were asked to predict their expectations for postpartum as far as time for infant interaction, etc. Postpartally, couples were asked to state the actual amount of time they were spending with their infant. The husband and wife were asked to rate each other and correlation coefficients were calculated to obtain a self rating reliability. Results indicated that prenatal expectations of time to be spent upon infant care activities were comparable to the time actually spent postpartum. Variance for men was linked with low trait anxiety and high prenatal expectations, while for women prenatal expectations for parent-infant interaction accounted for the majority of the variance.

No reliability or validity data were available for the instruments used other than that described above. It would have been helpful to have more direct observation of the parents rather than all self-reported behavior.

Nicholson et al (1983) in a descriptive study assessed forty (N=40) couples for the fathers' involvement in pregnancy and childbirth and if more

involvement resulted in more positive birth and fathering experiences. The researchers interviewed the subjects prenatally and rated answers to questions on a Likert like scale. Subjects were then observed for one hour during labor and a repeat interview was conducted one week post delivery. The postpartum interview consisted of rating various aspects of their birth experience, perceptions of their newborn and adaptation to the first few days of parenting. No reliability or validity data were presented for the instruments.

The results of this study suggested that reports of a close marital relationship were correlated with a positive birth experience, but was also related to change in fathers' daily routine and low fathering confidence. It was also postulated from data obtained from this study that previous child care experience may predict fathers' confidence level in caring for their newborns.

Perry (1983) conducted an experimental study to assess fathers' perceptions of their newborns following structured interactions. Fifty seven (N=57) married couples were assigned randomly to four treatment groups according to the parent who participated in the structured interaction (mother-infant group, father-infant group, parent group and control group). The control group received no structured interaction. Infant

behavior was measured twice (after birth and at one week). Mothers' and fathers' perceptions of their infants were measured three different times (after birth, one week, and one month). Four instruments were used in this study: Neonatal Perception Inventories I and II, Brazelton's Neonatal Behavioral Assessment Scale, and the Mother's Assessment of the Behavior of her Infant. Reliability and validity data were provided for the first three instruments but only suggested for the fourth instrument. Results of this study indicate no relationship between infant behavior and perceptions of the parents.

In the discussion of this study it was revealed that the Neonatal Behavioral Assessment Scale assesses interactive behaviors and neurological responses while the Neonatal Perception Inventories measure entirely different tasks (feeding, elimination, sleeping, crying, spitting up, and establishing a predictable schedule, etc.) These two instruments are not related and thus should not be utilized to measure parents' perception based upon infant behavior. It would be helpful to develop instruments to measure what they say they are measuring.

Jones (1984) conducted a descriptive study to identify the quality and quantity of the affectional behaviors exhibited by fathers toward their infants as

well as the relationships between certain paternal factors and these affectional behaviors. Two instruments, an observational checklist and a questionnaire, were used for data collection with the thirty (N=30) first-time fathers. No reliability or validity testing was done on either of the two instruments. The checklist addressed 19 behaviors (mostly caretaking) and the questionnaire sought both subjective and objective data in four major areas (general information; physical involvement surrounding the birth and postpartum period, nonphysical interactions, and fatherhood).

Findings indicated past child care experiences enhanced perception of the degree of input in the birthing process. More than 80% of the fathers exhibited behaviors involving tactile and visual interaction with their infants. Task activities occurred at lower frequencies. A larger sample and testing of the instruments utilized for reliability and validity would increase the impact of this study.

VARIABLES

Bowen and Miller (1980) explored father-infant attachment and its relationship to preparenthood classes, presence at delivery and infant state with forty eight fathers and their infants. Fathers were divided into three groups: those who were present at

delivery and took classes (N=21), those who were present at delivery and did not take classes (N=8), and those who were not present at delivery and did not take classes (N=17). The instruments used included a Paternal Behavior Observation Sheet and a Demographic Data Interview Sheet. Reliability data was provided for the observation sheet.

Results of the study suggested that those fathers present at delivery demonstrated more social attachment behavior than those fathers not present at delivery. Total attachment scores were higher for those fathers who were present at the births of their infants. Parenthood classes were not found to be significant with the development of an attachment between fathers and their infants. An indirect finding of this study was that infants who are awake and alert may elicit certain attachment behaviors from their fathers.

Jones (1981) in a descriptive study examined fifty one (N=51) father-infant dyads to determine if early contact with their infants or specific infant characteristics affected the development of attachment. Instruments used included a demographic questionnaire, the Broussard Neonatal Perception Inventory I & II, Brazelton Neonatal Behavioral Scale, Care-giving and play checklist, and father-infant interaction observation instrument. Reliability and validity data

were provided only for the observation instrument.

The findings of this study indicated that early contact seemed to enhance nonverbal communication at the one month period. Fathers appeared to feel more positively about high-irritability boys and low-irritability girls. Limitations of this study included the self selected manner in which subjects were obtained. The lack of random sampling limited the generalizability of results to other than the sample. More data about the instruments used would have been helpful to evaluate their effectiveness in the study.

Gabel (1982) conducted a descriptive study with twenty (N=20) fathers who had not been formally prepared to attend the births of their infants. After the deliveries the men were asked a series of open-ended questions about their expectations of the delivery, their actual experiences and what they would have found it helpful to know. No mention was made in the study of whether the instrument was in fact a formal one or whether validity and/or reliability data were available.

The data analyzed indicated that as a group the fathers had very negative expectations of childbirth, but in actuality had found the birth experience to be meaningful and positive. They were evenly divided as to whether their nurse or provider had prepared them adequately for the birth experience or whether they

would have preferred to attend childbirth classes. The sample used in the study was a homogeneous one consisting of all black men, employed, with at least a high school education. It would be interesting to determine if the results of this study hold true for a more heterogeneous sample.

Roberts (1983), in a descriptive study, examined the effect of infant behavior on the transition to parenthood. A demographic data questionnaire and a prenatal self-esteem scale were completed in the third trimester of pregnancy. Four weeks postpartum a brief interview addressing the labor and delivery experience was conducted and the postnatal research instruments were collected. The postnatal research instruments included an ease of transition checklist, parents' perceptions of role competence, postnatal self-esteem scale, obligatory infant behavior checklist, normative change scale, and parental perception of role competence scale. Reliability and/or validity data was presented for all research instruments. The researcher did advise further refinement of the instruments. The sample was a volunteer sample and thus the results of this study could not be generalized to other than the sample itself.

This study suggested that obligatory infant behavior affects both the parents' ease of transition to

parenthood and their perceptions of their infants.

Toney (1983) conducted an experimental study using thirty seven (N=37) first-time fathers attending the births of their infants and divided them into two groups: those holding their infants at delivery and those who did not hold their infants at delivery. At 12-36 hours postpartum the fathers were observed with their infants by two observers for a ten minute interval to assess for paternal-infant bonding behaviors. Reliability data were provided for the interaction assessment instrument.

No difference was noted between the two groups, but more bonding behaviors were noted with increased levels of education, male infants, breastfed infants, and forcep or Cesarean delivered infants. Withholding the privilege of holding their infants in the delivery room from a particular group of fathers seemed of questionable practice to this researcher.

Jones (1986) examined the effects of infants' social competence and state upon father-newborn interaction in a descriptive study of one hundred fifty seven (N=157) first-time fathers and their infants. Infants were evaluated using the Brazelton Neonatal Behavior Assessment Scale at 24 hours or more of age. Fathers completed the Greenberg First Father Survey and a Demographic Data Questionnaire prior to being videotaped

for ten minutes while they held their infants. Reliability and/or validity data was provided for all instruments.

The major finding reported from this study was that the state of the infant during the observation period appeared to predict the frequency of certain types of interactional behavior - specifically affection and comfort.

Summary

It is evident from this review of the literature that certain studies suggested an established pattern of attachment behaviors exhibited by fathers toward their infants. The paternal behaviors obtained from the above studies were incorporated into the Paternal Bonding Observation Instrument used in this investigation. Due to the suggested importance of the infant's state upon the behaviors elicited from the father, the state of the infant according to Brazelton's Neonatal Assessment Scale was included on the Paternal Bonding Observation Instrument. Variables identified from the literature as potentially affecting paternal-infant attachment were addressed in the Demographic Data Questionnaire used in this study (strength of marriage, education of father, profession of father, income, age of father, sex of infant, method of feeding infant, etc.).

For this study several factors evident in the literature (paternal attachment behavior, variables affecting paternal-infant attachment, as well as one of the instruments) were drawn upon by this researcher. A detailed discussion of how these factors were utilized for this investigation can be found in the next Chapter entitled Methodology.

CHAPTER III

METHODOLOGY

This chapter covers an orderly progression of the steps used to implement this investigation. The areas covered include the research approach, setting, population, sample, actual procedure followed, variables, the data gathering process and the assumptions and limitations of the study.

Research approach

A descriptive-comparative (non-experimental) design was selected for this study. The purpose was to compare the attachment behaviors of first-time fathers who attended the births of their infants with those first-time fathers who did not attend the births of their infants by observing them on the second day following birth. Similarities and differences between the two groups were then to be described.

Setting, population and sample

The setting consisted of two metropolitan hospitals in the Southeastern United States during late 1987 and early 1988. Clients of one of these hospitals were in the middle to upper socioeconomic ranges while those clients of the other hospital fell into the middle to lower socioeconomic ranges. The hospitals both offered the full range of health services for reproductive families including antepartal, intrapartal and

upon those fathers agreeing to participate and the availability of the researcher to collect the data at a mutually acceptable time for both fathers and researcher.

In the hospital with the higher socioeconomic clientele a representative from the education department reviewed records on the postpartum unit to ascertain whether the criteria for potential inclusion in the study were met. This representative then called the researcher once per week with a list of those potential subjects meeting all criteria (first-time father, intact marriage, vaginal delivery and stable infant). The researcher then contacted the potential subjects by telephone to explain the study and ask for their participation.

In the second hospital a form, designed by the researcher listing all required criteria for potential subjects in checklist format, was placed on the Labor and Delivery Unit for nurses to complete on all primiparas. If all criteria were met by a particular patient, the checklist was placed in an envelope at the nurses' station. The researcher would then call the Labor and Delivery Unit 3 times per week to obtain names of those potential subjects. The researcher then contacted the potential subjects by telephone to explain the study and ask for their participation.

Procedure

When a potential subject expressed willingness to participate in the study an appointment mutually agreeable to subject and researcher was made for the second day following the birth of the infant. On the second day following the infant's birth the researcher reported to the hospital and met the potential subject, his wife and the infant. The study, including the method of data collection and requirements of the subject, were again explained and verbal agreement from the potential subject reconfirmed. The potential subject was then allowed to read the Informed Consent Form and his signature was obtained. A copy of the Informed Consent Form with an assigned code number was given to the subject at this time. The subject was told to contact the researcher with his code number if he decided at a later date not to participate in the study. All data obtained from his participation could then be withdrawn.

The subjects were observed by the researcher holding their infants for a 30 minute uninterrupted period. A Bonding Observation Instrument was used to record the data gathered during this session. Out of each minute the researcher observed for 15 seconds and then recorded those bonding behaviors (frequently there were several) observed during the remaining 45 seconds. The infant state according to Brazelton's (1984) initial and

and predominant state definitions were recorded after each 15 second observation period as a number from 1-6 in the area designated on the instrument. A watch with a second hand was used to monitor time intervals. After the 30 minute observation period the subjects were asked to complete a Demographic Data Questionnaire. Total time required of participants averaged 40 minutes.

Confidentiality of subjects was maintained through the use of code numbers rather than names to identify instruments. The code identity was maintained separate from the data. Code numbers were not placed on consent forms retained by the researcher (where the subjects' identity/signature was located), but were given to subjects should they decide later not to participate. The statement "I understand that data will be reported in group form from which no individuals can be identified" was included in the informed consent form and adhered to by the researcher.

Anonymity of the subjects was not possible as the researcher personally observed each subject.

Although the use of intermediaries to obtain consent was not possible in either clinical setting, the researcher attempted to maintain objectivity when explaining the study and asking potential subjects for participation.

The dependent variable for this study was the fathers' bonding behaviors. The primary independent variable for this study was the fathers' presence or absence at the deliveries of their infants. The dependent variable was operationalized by the use of the Bonding Observation Instrument with weighted scores for each behavior observed. The independent variable was operationalized with a question on the Demographic Data Questionnaire to ascertain whether the father was present at his infant's birth.

Other independent variables predicted from the literature to potentially affect the development of paternal-infant attachment included age of father, education level, race, attitude toward delivery experience, socioeconomic status, sex of infant, previous experience with newborn infants, participation in childbirth education classes, length and strength of marriage, occupation, and method of feeding the infant. These variables were all addressed with questions in the Demographic Data Questionnaire. One additional variable, the state of the infant, was also addressed in the literature as affecting paternal-infant attachment and is assessed on the Bonding Observation Instrument.

Variables deemed uncontrollable were fatigue or distraction of the subject and/or researcher during the observation period.

Data gathering process

Two instruments were used in the data collection for this study. The **Bonding Observation Instrument** was first used in a study conducted by Taubenheim in 1981. Consent for the use of this instrument was implied when the instrument and instructions for its use were sent upon request. No reliability or validity information was available from Ms. Taubenheim. Content validity was established by a panel of experts at Nell Hodgson Woodruff School of Nursing.

The **Bonding Observation Instrument** addressed four major categories of behaviors associated with paternal-infant attachment as well as a broad miscellaneous category. These categories included Visual Awareness, Tactile Awareness, Tactile-holding, and Vocalization as well as the Miscellaneous category mentioned above. Under each of the five categories behaviors were listed with an a, b, or c preceeding them. Those behaviors preceded by an a were assigned a value of 1 point, those preceded by a b were assigned a value of 2 points, and those preceded by a c were assigned a value of 3 points. A section addressing the state of the infant according to Brazelton's (1984) initial and predominant state definitions was included at the bottom of the instrument. A copy of this instrument along with behavior and infant state definitions is included as

The second instrument, **The Demographic Data Questionnaire**, was designed by the researcher in an attempt to control for as many independent variables as possible and to more accurately compare and describe the groups. It consisted of 13 multiple choice questions addressing the variables outlined in the discussion on variables earlier in this chapter. There is no reliability or validity data available for this instrument. A copy of **The Demographic Data Questionnaire** is included as Appendix C.

Assumptions and limitations

Two basic assumptions were made at the onset of this investigation. The first was that fathers exhibit bonding behaviors with their newborns which are observable and measurable. The second assumption was that fathers' relationships with their infants resemble that of mothers' relationships with their infants.

Several potential limitations were mentioned prior to initiation of this study. One limitation identified was the inability to generalize the results of this study other than to the study itself due to the non-random selection process. Another limitation that was identified from the literature was the potential difficulty of finding fathers who did not witness the births of their infants.

Summary

Data was collected for this project using the above mentioned methodology. The data obtained by using this methodology will be presented and analyzed in Chapter IV, Presentation and Analysis of Data.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The data obtained for this study will be presented and analyzed under the following headings: The Sample, Analysis, and Discussion. Due to unforeseen circumstances at the facility with primarily low to middle range socioeconomic group clients, none of the data for this study were obtained from that facility. Therefore, all the data presented here were obtained from the facility with primarily middle to upper socioeconomic group clients. Because the facility utilized for data collection has a very high rate for fathers witnessing the births of their infants, no subjects could be found to comprise the group of fathers not witnessing the births of their infants. No decisions could be made about the hypotheses presented in Chapter 1 without the comparison group. The data presented in this chapter, therefore, are descriptive in nature regarding those fathers who did witness the births of their infants.

The Sample

Fifteen first-time fathers comprised the sample for this project. All of the fifteen fathers were married to the mother of the infant as specified in the criteria for inclusion as a subject. One father had been married under 1 year, ten of the fathers had been married from 1-5 years, and 4 fathers had been married from 5-10 years. Fourteen of the fathers indicated they felt their

marriages were very strong. One father circled somewhat strong (next to the weakest choice) to describe his marriage.

All of the fifteen fathers attended the births of their infants. Twelve of them described the experience as an "emotional high," two described it as very pleasant, and one described it as somewhat pleasant (next to the weakest choice). Fourteen of the fathers were white and the remaining father was black. Fourteen of the fathers reported at least some college while one indicated he had not completed high school.

The age distributions for the sample are listed in Table 1 below:

Table 1

AGE RANGES OF FATHERS

AGE RANGE	#OF FATHERS	% OF SAMPLE
Below 20	0	0
20-24	1	7%
25-30	7	46%
31-35	3	20%
36-40	3	20%
Over 40	1	7%

As indicated in Table 1 the most (46%) subjects were in the 25-30 range. All were at least 20 or above. Three (20%) of the fathers were 31-35 years old and three (20%) were 36-40 years old. One father circled over 40

as his age range on the questionnaire.

Table 2 shows the distribution of occupations of the fathers in the sample.

Table 2

OCCUPATIONS OF FATHERS

OCCUPATION	# OF FATHERS	% OF SAMPLE
Executive	9	60%
Professional	4	27%
Blue Collar	2	13%

The majority (60%) of the fathers in the sample circled the executive/manager choice on the questionnaire while the remaining 40% gave their occupation as a professional (physician, nurse, lawyer, architect, etc.) or blue collar (factory worker, plumber, etc.) worker.

Table 3 shows the distribution of yearly income (total for couples) within the sample. Only those categories of income with data were included in the table.

TABLE 3

YEARLY INCOME

INCOME	# FATHERS	% SAMPLE
Below 10,000	1	6.6%
15,001-20,000	1	6.6%
25,001-30,000	1	6.6%
35,001-40,000	1	6.6%
40,001-50,000	2	13.6%
Over 50,000	9	60.0%

As illustrated by the table, the majority of subjects in the sample (60%) have a yearly income of over \$50,000.00. At least one father fell into most of the other categories with only three categories lacking a subject. Therefore, this sample reflects a solid middle to upper middle class skew for socioeconomic level.

All but three of the fathers stated they had never before cared for a newborn infant, while all but one of the fathers expressed some level of comfort with caring for their own newborns. All but two of the fathers had attended some form of prenatal classes. The exact nature of these classes was not determined.

The sex of the infants were fairly evenly distributed in the sample: 8 of the infants were male and 7 were female. During the observation periods 12 of the infants were in a fairly deep sleep state or either a 1 or 2 on Brazelton's Neonatal Assessment Scale. Only 3 of the infants were awake with a state of 4 on the scale.

Analysis

Bonding scores of fathers during the thirty minute observation period ranged from 182 (low) to 447 (high). Following the completion of data collection the data were quantified and entered into a computer for multiple regression analysis of variance. The bonding scores were the dependent variable; state of the infant, description of birth experience, age of fathers, education of

father, income of parents, sex of infant, previous experience caring for infants, comfort level in caring for own infant, prenatal class attendance, length of marriage, strength of marriage, and occupation of the fathers were all entered as independent variables.

Each independent variable was separately compared with the dependent variable and R squared computed for each. Table 4 shows the results of the computations.

TABLE 4

R SQUARED OF BONDING SCORES AND VARIABLES (15)

INDEPENDENT VARIABLE	R SQUARED	df
State of Infant	.21	13
Birth Description	.09	13
Age of Fathers	.03	13
Education of fathers	.08	13
Income	.02	13
Sex of infant	.02	13
Caring for infant	.13	13
Comfort with infant	.06	13
Prenatal classes	.00	13
Length of marriage	.00	13
Strength of marriage	.11	13
Occupation	.03	13

As can be seen from the above table, the state of the infant (.21) is most closely correlated with the bonding scores followed by previous experience caring for an infant (.13) and strength of marriage (.11). When all

the variables were compared with bonding scores and analyzed for variance the resulting R Squared was .9725.

When entering the data into the computer it was noted that one father whose infant was awake had a low bonding score compared to the other two fathers with awake infants. This father with the low bonding score was eliminated from the sample and the data analyzed again. The results of analyzing the data for the remaining 14 fathers are reflected in Table 5 below.

TABLE 5

R SQUARED OF BONDING SCORES/INDEPENDENT VARIABLES (14)

VARIABLES	R SQUARED	df
State	.399	12
Birth description	.101	12
Age of father	.029	12
Education	.22	12
Income	.023	12
Sex of infant	.007	12
Care of infant	.121	12
Comfort	.068	12
Classes	.002	12
Length of marriage	.001	12
Strength of marriage	.106	12
Occupation	.100	12

With the elimination of this one father from the sample the correlation of state of the infant with bonding scores was almost doubled (from .21 to .399).

Additionally, significant increase in R Squared was noted in education (.08 to .22) and occupation (.03 to .10). This father was a blue collar worker and was the one who indicated he had not completed high school. When the multiple regression analysis was used to compare all independent variables with bonding scores, the resulting R Squared was .993.

When independent variables with seemingly negligible R Squareds were eliminated from the sample and total effect R Squared again computed, the R Squared decreased. It was originally thought that by eliminating the seemingly negligible effect variables, the total effect R Squared could be increased. Therefore, while each independent variable may seem to have a negligible effect on the dependent variable, they totally account for 97% of the variance of the 15 subject sample and 99% of the 14 subject sample.

Discussion

While none of the independent variables addressed in this descriptive study were found to be significant (.5 or above) in correlation with the bonding scores, the effects of all of them together accounted for 97% of the variance, a very significant finding. The state of the infant was found to be the highest predictor of bonding scores. The more awake the infant, the higher the father's bonding score will be. Previous studies have found higher bonding scores when fathers feed their

infants. Previous studies have also postulated that prepared fathers tend to be higher educated fathers (Palkovitz, 1985). No significant correlation was found in this study between these two variables, but education was found to have a .22 R Squared when one subject was dropped from the sample (See Table 5). Palkovitz (1985) also linked the quality of the birth experience with the strength of a couple's marriage. R Squared for both these variables were .10-.11, not really significant but not the lowest values either.

The Bonding Observation Instrument was simple to use and score. A shorter observation period, a 20 minute instead of 30 minute session, might be less fatiguing for both subjects and researcher and still yield valid data. Videotaping of sessions might enhance accuracy of observations by allowing a second observer as well as a timekeeper without crowding the patient's room with additional people. Computing interrater reliability on the tool would be simpler with videotaped sessions as well.

The Demographic Data Questionnaire was simple to use and quantify for analysis. The sample evaluated had no difficulty with its current reading level. However, for future use with subjects of lower reading levels, the tool may require further evaluation. Question 8 regarding preference of infant's sex should have an additional category (c) no preference. Question 10

regarding comfort level of caring for infant should have the following responses for (d) and (e): d. somewhat uncomfortable e. uncomfortable. Question 13 should have the following responses regarding strength of marriage: d. somewhat weak e. weak.

The findings of this study as analyzed in this chapter will be further refined in Chapter V to form conclusions. Recommendations will also be made for further study in the area of paternal-infant bonding.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter is composed of the three sections outlined in the title. The summary will present succinctly what was done in this study in a concise format. The conclusion section is composed of generalities drawn from the findings based on the collected data. Recommendations will be made both for future research and for nursing practice based upon the data and conclusions drawn from this study.

Summary

In order to determine the effects of presence at delivery upon paternal-infant bonding, a comparative-descriptive study was conducted. No subjects were obtained for the group who did not attend the births of their infants. Therefore, subjects for this study were 15 first-time fathers who attended the births of their infants at a large Southeastern United States metropolitan area hospital. Subjects were required to be legally married to the mother of the infant, the father of an infant delivered vaginally who scored an Apgar of 8 or above at five minutes of age. Subjects were selected by an intermediary at the hospital involved and were then observed by the researcher holding their infant for one thirty minute session. After the observation session, subjects completed a demographic

data questionnaire which addressed independent variables identified from the literature to potentially affect paternal-infant bonding.

The dependent variable for the study was the Bonding score obtained from the Bonding Observation Instrument. The independent variables were obtained from both the Demographic Data Questionnaire and the Bonding Observation Instrument.

Conclusions

Based on the data and findings, the following conclusions seem warranted:

1. Attendance at the births of their infants was very popular with the first-time fathers in the sampled population of this study.

2. State of the infant was a predictor of paternal-infant bonding scores.

3. All the independent variables addressed in this study affected paternal-infant bonding scores.

Recommendations

Based on the data and conclusions, the investigator offers the following recommendations for further research:

1. Replication of the study with a larger, randomized sample that will allow generalization of results to more than just the sample as well as analysis using more sophisticated statistics

2. Replication of the study with a population that includes higher proportions of births unattended by fathers to allow measurement of that variable

3. Replication of the study with an attempt to match the two groups (birth attenders vs. birth non-attenders) to eliminate as much variability as possible

Based on the data and conclusions, the investigator offers the following recommendations for nursing practice:

1. Encourage fathers to interact with their infants during periods when infants are awake.

2. Assess fathers for previous experience with infants; assist those fathers without previous experience during initial interactions with their newborn in an attempt to boost confidence levels.

Closure

Given the evidence presented by the literature review and the data obtained from this investigation, it is evident that fathers begin the process of attachment with their infants soon after birth. This initial bonding or formation of an attachment will form the basis for a lifetime relationship between these two individuals. As health care professionals devoted to providing for the assessed needs of our clients, it is imperative that we address this need. The provision of support and an atmosphere conducive to getting

acquainted with a new family member is definitely within the realm of perinatal nursing professionals.

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APPENDICES



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August 21, 1987

I.R.B. Assurance # M1427

Ms. Sandra Wiggin
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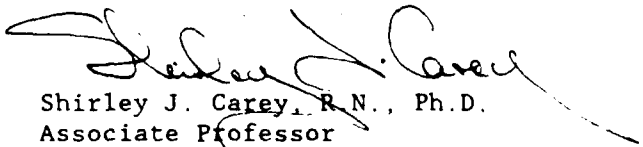
Dear Ms. Wiggin:

This is to inform you that your research proposal entitled, "Effects of Presence at Delivery on Paternal-Infant Bonding," has been approved by the Institutional Review Board.

If there are any significant changes involving human subjects or the procedures for inclusion of human subjects during the conduct of the study, please advise the Chairperson of the Institutional Review Board. A report of your study, in the form of an abstract, should be submitted to Ms. Barbara Bruno, Secretary, Institutional Review Board upon completion of the study. If you are unable to complete the approved study within one (1) year, you will need to submit a request for extension of the approval granted by the Committee.

We extend best wishes for the successful completion of your research and would like to be of assistance if you deem it is needed to complete your study.

Sincerely,



Shirley J. Carey, R.N., Ph.D.
Associate Professor
Chairperson, Institutional Review Board

SJC:bab

cc: J. Flynn
J. Megenity

AFFIRMATIVE ACTION - EQUAL OPPORTUNITY EMPLOYER

THE ROBERT W. WOODRUFF HEALTH SCIENCES CENTER

DATE _____ TIME _____ CODE# _____

PATERNAL BEHAVIORS

Visual Awareness

- a. Focus on infant
- b. Focus face different plane
- c. Focus face meeting eyes

Tactile Awareness

- a. Fingertip poking
- b. Patting - palms & fingers
- c. Stroking - palms & fingers

Tactile (holding)

- a. Holds - no trunk contact
- b. Head, neck or chest contact
- c. Enfolded with trunk contact

Vocalization

- a. Talks about infant
- b. Talks to infant - no tone change
- c. Talks to infant - tone change

Miscellaneous

- c. Smiles at infant
- c. Hugs infant
- c. Kisses infant
- c. Grasps infant's hand

INFANT BEHAVIOR

Infant state

TOTAL SCORE

161718152021222324252627282930

APPENDIX B

Emory University
Nell Hodgson Woodruff School of Nursing

EXPLANATION OF PATERNAL BEHAVIORS AND INFANT STATE

PATERNAL BEHAVIORS

Visual Awareness

a. Focus on infant--the father does not focus his visual attention on his infant's face. The father looks at his baby, but focuses his attention on parts of the infant's body other than the face.

b. Focus on face different plane--the father looks at the infant's face but from a different plane, i.e., above, below or to the side of the infant so their eyes are not parallel.

c. Focus face meeting eyes--the father holds the baby or positions himself so their faces are on the same plane and their eyes are parallel; they gaze into one another's eyes.

Tactile Awareness

a. Fingertip poking--the father touches his infant with his fingertips in a poking or tapping manner on any part of the infant's body.

b. Patting--palms and fingers--the father touches his infant with an open hand, using his palms and fingers in a gentle tapping manner on any part of the infant's body.

c. Stroking--palms and fingers--the father with an open hand uses his palms and fingers to touch, lay, gently stroke or rest his hand on any part of the infant's body.

Tactile (holding)

a. Holds--no trunk contact--the father holds his infant in his arms or on his knees away from his body so his trunk does not touch the trunk of the infant.

b. Head, neck or chest contact--the father holds his infant so the head of the infant touches the upper chest, neck or head of the father. Usually in this position, the long axis of the infant's body is parallel to the long axis of the father's body. And the baby's face is usually against the head, neck, or upper chest of the father so he is unable to see the face of the infant.

c. Enfolded with trunk contact--the father is holding the infant in his arms so that the abdomen and chest of the infant is touching the trunk of the father. In this position, the father is

able to see his infant's face.

Vocalization

a. Talks about infant--the father discusses or makes a comment about the infant to his wife or the observer.

b. Talks to infant--no tone change--the father talks directly to the infant but without changing the pitch or tone of his voice.

c. Talks to infant--tone change--the father talks directly to the infant and alters the pitch or tone of his voice.

Miscellaneous

c. Smiles at infant--the father has definite widening of his mouth with a positive affect shown on his face. Smiles must be directed to the infant.

c. Hugs infant--the father embraces his infant by enfolding the infant in his arms with the infant's trunk or head touching the trunk or head of the father. The father may appear to give his infant a "squeeze" and bend slightly so his head touches the infant.

c. Kisses infant--The father's lips brush the infant's skin

c. Grasps infant's hand--The father allows the infant to grasp his finger or hand.

INFANT STATE

1--Deep sleep--regular breathing, eyes closed, no spontaneous activity except startles or jerky movements at quite regular intervals.

2--Light sleep--eyes closed, rapid eye movements under closed lids, low activity level with random movements and startles or startle equivalents, movements smoother and more monitored than in 1.

3--Drowsy--eyes may be open but dull and heavy-lidded, or closed, eyelids fluttering, activity level variable, with interspersed, mild startles from time to time.

4--Quiet alert--seems to focus invested attention on source of stimulation, such as an object to be sucked, or a visual or auditory stimulus, motor activity a minimum.

5--Active alert--considerable motor activity, eyes open, thrusting movements of the extremities, spontaneous startles, brief fussy vocalizations.

6--Crying--intense crying, high motor activity.

APPENDIX C

Emory University
Nell Hodgson Woodruff School of Nursing

DEMOGRAPHIC DATA QUESTIONNAIRE

Answer the following questions by circling the letter of the answer that most accurately applies to you.

1. Were you present at the birth of your baby?

- a. Yes
- b. No

2. If you were present at your infant's birth, how would you describe this experience?

- a. An emotional "high"
- b. Very pleasant
- c. Pleasant
- d. Somewhat pleasant
- e. Not pleasant at all

3. How old are you?

- a. Below 20
- b. 20-24
- c. 25-30
- d. 31-35
- e. 36-40
- f. Over 40

4. What is your highest level of education?

- a. Elementary school
- b. Some high school
- c. High school graduate
- d. Some college
- e. Four year college degree
- f. Graduate work
- g. Graduate degree (1 or more)

5. What is your race?

- a. Black
- b. White
- c. Oriental
- d. Other

6. What is your approximate yearly income (yours and your wife's combined)?

- a. Below \$10,000
- b. \$10,001-\$15,000
- c. \$15,001-\$20,000
- d. \$20,001-\$25,000
- e. \$25,001-\$30,000
- f. \$30,001-\$35,000
- g. \$35,001-\$40,000
- h. \$40,001-\$50,000
- i. Over \$50,001

7. What sex is your baby?

- a. Male
- b. Female

8. Is your baby the sex you hoped it would be?

- a. Yes
- b. No

9. Have you ever taken care of a newborn baby?

- a. Yes
- b. No

10. How would you rate your comfort level with taking care of your infant?

- a. Very comfortable
- b. Moderately comfortable
- c. Comfortable
- d. Somewhat comfortable
- e. Not comfortable at all

11. Did you attend childbirth classes?

- a. Yes
- b. No

12. How long have you been married?

- a. Under 1 year
- b. 1-5 years
- c. 5-10 years
- d. Over 10 years

13. How strong would you consider your marriage?

- a. Very strong
- b. Moderately strong
- c. Strong
- d. Somewhat strong
- e. Not strong at all

14. What is your occupation?

- a. Business executive or manager
- b. Professional (physician, nurse, clergy, lawyer, etc.)
- c. Blue collar (plumber, electrician, factory worker, construction worker, sanitation department worker, etc.)
- d. White collar (bank teller, secretary, office worker, etc.)

15. What method of feeding your baby are you using?

- a. Breast
- b. Bottle
- c. Both breast and bottle

APPENDIX D

Emory University
Nell Hodgson Woodruff School of Nursing

INFORMED CONSENT

My name is Sandra D. Wiggin. As part of my course requirements as a graduate student in Neonatal/Perinatal Nursing, I am doing a study of how fathers form an attachment to their newborn babies by observing fathers with their babies on the second day of life. There will be two groups observed, those fathers who attended the births of their infants and those who did not attend the births of their infants.

The study is completely observational in nature and does not involve experimentation of any kind. Those who choose to participate will be observed with their infants by me for 30 minutes on their infant's second day of life. After the observation period is complete, a questionnaire designed to assess similarities and differences of those willing to participate in the study will be completed by the fathers. The questionnaire will require approximately 10 minutes to complete.

There are no known risks of harm or discomfort relating to participation in this study. The researcher will not be in actual physical contact with the father, mother or infant.

There are no known benefits to you as a participant. It is hoped that others in your similar circumstances will benefit from the results of this study in the future.

I, the undersigned, have been given a chance to read the above description which explains the study's purpose, the procedures which will be used, and any benefits, discomforts, or risk of harm which could result from my participation in this project. The researcher has gone over this explanation with me and I have been given a chance to ask any questions I have about the project or research procedures. If I have questions or concerns later, I can call SANDRA D. WIGGIN at 320-6833.

I understand that this is completely voluntary, that I do not have to participate in the study and that I can stop at any time that I wish. If I refuse to participate now or withdraw now or withdraw from the study later, it will have no effect on any regular services or benefits available to me at this facility.

I also understand that any personal information used in this study will be treated confidentially. Information that identifies me as an individual will not be released without my separate

consent to anyone for purposes which are not directly related to this research study. I understand that data will be reported in group form from which no individuals can be identified.

The nature of the project has been explained to me and I have been given a copy of this statement. I agree to participate in this study.

DATE

SIGNATURE OF RESEARCH SUBJECT

DATE

INVESTIGATOR